

### **III. REMARKS**

Claims 17-22 and 30 are pending in this application. Claims 17-22 and 30 stand as rejected. The Examiner's objections and rejections are addressed below in substantially the same order as in the office action. The Applicants request reconsideration of the pending claims in view of the remarks set forth below.

#### **DETAILED ACTION**

##### ***Claim Rejections - 35 USC § 112***

Claims 17-22 and 30 stand as rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is the Examiner's position that the claims are directed to a method of using an inverse emulsion in a cosmetic composition and that the body of the independent claim following the term "wherein" does not further clarify if the limitations are related to the emulsion as a whole, the product, or any additional element contained within the emulsion as a whole.

The Examiner states that it is not clear if the weight ratio is relative to the inverse emulsion as a whole, or the product resultant from the admixing. It is also unclear to the Examiner whether the anionic acrylic polymer is required to be polymerized or not, as the claim uses the phrase "obtained by." The Examiner also states that it is not clear if the concentration of acrylic monomer is relative to the weight of the emulsion as a whole or the product within the emulsion. Clarification is required.

The Examiner also objects to the Applicants' use of the term "strongly acidic." It is the Examiner's position that strongly acidic is a relative term which renders the claim indefinite. The basis for the Examiner's position is the term "strongly acidic" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is unclear what is considered to be strongly acidic and what is not as no point of reference is cited. Clarification is required.

**The applicants respectfully traverse the examiner's rejections as follows.** In regard to the first issue raised by of the Examiner, namely that the wherein phrase from Claim 30:

[W]herein the weight ratio between the aqueous phase and the organic phase is from about 4:1 to about 2:1.

does not further clarify if the limitations are related to the emulsion as a whole, the product, or any additional element contained within the emulsion as a whole; it is the Applicants' position that the weight is relative to the inverse emulsion as a whole. This is supported by the specification at paragraph 0025 of the published application.

In regard to the Examiner being unclear whether the anionic acrylic polymer is required to be polymerized or not, as the claim uses the phrase "obtained by," the Applicant respectfully requests further clarification as to the Examiner's rejection. The claim now reads, in part:

A procedure for preparing a cosmetic comprising preparing the cosmetic using an inverse emulsion having an aqueous phase and an organic phase comprising from about 20 to about 70% by weight of an acrylic polymer obtained by the inverse emulsion polymerization of ...

and clearly requires that the acrylic polymer in the emulsion be the polymerization product of admixing the reactants under the conditions specified. The claims do not use the term "anionic acrylic polymer."

In regard to the Examiner's position that it is not clear if the concentration of acrylic monomer is relative to the weight of the emulsion as a whole or the product within the emulsion; it is the Applicants' position that the concentration of the acrylic monomers are relative to the weight of the product (polymer) within the emulsion. The basis for this position may be found at paragraphs 0026-0033.

In regard to the Examiner's objections to the use of the term "strongly acidic," the Applicants respectfully assert that "strongly acidic" and "strong acid" have a well-recognized meaning in chemistry. According to the Bronsted-Lowry theory, the strength of an acid is related to its degree of dissociation in water and strong acids are those for which essentially all of the acid molecules ionize in a 1M aqueous solution. This means that in aqueous solution at standard temperature and pressure, the concentration of hydronium ions is equal to the concentration of strong acid introduced to the solution:

$$[\text{HA}] = [\text{H}^+] = [\text{A}^-]$$

For strong acids the pH of their solution is dependent upon their concentration:

$$\text{pH} = -\log[\text{H}+] = -\log[\text{AH}]$$

Whether an acid is strong or not can be simply determined by measuring the pH of its aqueous dilute solution and verifying the exactness of the above expression.

On the contrary, for weak acids:

$$[\text{HA}] \gg [\text{H}+] = [\text{A}^-] \quad \text{and} \quad \text{pH} = -\log[\text{H}+] \gg -\log[\text{AH}]$$

In this case, the pH of their aqueous solutions depends on the value of the dissociation constant.

Therefore, it is the Applicants' position that the claims are not in condition for Examination and Allowance in view of §112.

#### *Claim Rejections - 35 USC § 103*

**Claims 17-22 and 30 stand as rejected under 35 U.S.C. 103(a) as being unpatentable over Yeung et al. (US Patent 5,721,313) in view of Fillipo et al. (US Patent 5,169,540).**

It is the Examiner's position that Yeung discloses polymer emulsions formed by inverse polymerization reactions where the polymer is a reaction product of:

- (a) an ethylenically unsaturated carboxylate having between about 3 and about 6 carbon atoms;
- (b) an ethylenically unsaturated monomer which is nonionic in nature;
- (c) an ethylenically unsaturated monomer containing one or more sulfonate or sulfoalkyl groups;
- (d) an ethylenically unsaturated monomer having surface active properties; and
- (e) a crosslinking agent is provided wherein:
  - (a) can be acrylic acid or methacrylic acid in the amount of 50-90%,
  - (c) can be 2-acrylamido-2-methylpropanesulfonic acid (AMPS) in the amount of 1-20%, and
  - (e) can be methylenebisacrylamide in the amount of 0.01-5.0%.

The Examiner notes that the polymer composition can be utilized in a cosmetic composition (column 1, lines 60-64); that the emulsions are water in oil emulsions (abstract); the oil phase can comprise hydrocarbon solvents, such as mineral oils (column 4, lines 13-30); and that the examples disclose the preparation of numerous emulsions obtained with varying amounts of each component utilized.

The Examiner concedes that Yeung does not disclose the use of a cationic acrylic monomer and cites Fillipo as disclosing inverse emulsions comprising cationic monomers commonly copolymerized with acrylamide including acryloyloxyethyltrimethylammonium chloride and methacryloyloxyethyltrimethylammonium chloride (column 4). The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized the polymers of Fillipo since it is disclosed the cationic monomers provide stable blends.

The Examiner concluded the rejections with an admonition to the Applicants that where the general conditions of the claims are met, burden is shifted to applicant to provide a patentable distinction and where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *Citing In re Aller*, 220 F.2d 454 105 USPQ 233,235 (CCPA 1955).

The Applicants respectfully traverse the Examiner's rejections as follows. It may be helpful to compare the Examiner's references to the present invention in a table:

Ethylenically unsaturated monomer	US 5,721,313 (Yeung)	Present Invention	US 5,169,540 (Filipo)
...carboxylate	50-90%	25-45%	no
...nonionic	5-48%	no	yes (possible)
...sulfonate or sulfoalkyl groups	1-20%	55-76%	no
...having surface active properties	0.01-5%	no	no
...cationic	no	0.1-5%	yes
Crosslinking agent	0.01-5%	0.01-1%	no
<b>Fields of Use:</b>			
	Specific: inks, pigments and dyes thickener (+ cosmetic, but within many other)	cosmetic	water treatment

As the Examiner may note, there is actually quite a bit of difference in the components of the three references. This is in marked contrast to the Examiner's rejection "Yeung does not disclose the use of a cationic acrylic monomer" as if that is the only difference between the references. For example, Yeung also employs different amounts of carboxylated and sulfonated monomers and requires the use of a nonionic monomer and a monomer having surface active properties.

Fillipo is even more different from the present invention than Yeung. The emulsion polymers of Fillipo do not contain carboxylated or sulfonated (anionic) monomers. They do not employ crosslinking agents. In fact, they are copolymers acrylamide and one or more cationic monomers, homopolymers of cationic monomers or copolymers of cationic monomers.

While the cationic (non anionic) emulsion polymers of Fillipo are said to provide stable blends with cationic polymers in aqueous solutions; Fillipo does not teach that cationic monomers provide stable blends in all cases. Rather Fillipo teaches that this stability is observed in compositions made from two cationic polymers, one in emulsion form and the other in aqueous solution.

Further, Fillipo does not suggest the combined presence of two different functionalities in the same polymer, a cationic one and an anionic one as is claimed in the present application. Because of these distinct and striking dissimilarities of the Examiner's references to the invention as presently claimed, it is **not** obvious to one of ordinary skill in the art to utilize the polymers, or rather the monomers, of Fillipo to modify the polymers of Yeung. Allowance of the remaining claims, as amended, is respectfully requested.

## CONCLUSION

For all the foregoing reasons, Applicants now believe that the pending application is in condition for allowance and such action is hereby requested. The Commissioner is hereby authorized to charge any fees to Deposit Account No. **50-4920 (LSP-1016US)**.

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Respectfully submitted,

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